

# The hyphsubst package

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2008/06/09 v0.2

## Abstract

A T<sub>E</sub>X format file may include alternative hyphenation patterns for a language with a different name. If the naming convention follows `babel`'s rules, then the hyphenation patterns for a language can be replaced by the alternative hyphenation patterns, provided in the format file.

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## 1 Documentation

### 1.1 In short

The package is an experimental package that allows the substitution of hyphenation patterns, example:

```
\RequirePackage[ngerman=ngerman-x-20080601]{hyphsubst}
\documentclass{article}
\usepackage[ngerman]{babel}
```

The patterns `ngerman` are replaced by the patterns `ngerman-x-20080601`. The format must contain these patterns and should use the naming scheme of either `babel`'s `language.dat` or `etex.src`'s `language.def`.

## 1.2 Longer version

Assume the format may contain the following hyphenation patterns (excerpt from `language.dat`):

```
...
ngerman dehyphn.tex
ngerman-x-20071231 dehyphn-x-20071231
ngerman-x-20080601 dehyphn-x-20080601
=ngerman-x-latest % alias for ngerman-x-20080601
...
```

The patterns that contain `-x-` are experimental new patterns for `ngerman`. However, package `babel` does not provide the use of patterns that do not have the same name as the used language (dialect). The `babel` system remembers patterns in macros: `\l@<name>`.  $\varepsilon$ -TeX's `etex.src` uses `\lang@<name>` instead. In the following we use `babel`'s naming scheme, but `etex.src`'s naming scheme is supported, too.

This package `hyphsubst` solves the problem by redefining the macro `\l@<name>` to use other patterns.

`\HyphSubstLet {<nameA>} {<nameB>}`

`\l@<nameA>` now has the same meaning as `\l@<nameB>`. The patterns for `nameB` must exist. If the patterns for `nameA` exist, then they will be overwritten to use the patterns for `nameB`. Example:

```
\documentclass{article}
\usepackage{hyphsubst}
\HyphSubstLet{ngerman}{ngerman-x-20080601}
\usepackage[ngerman]{babel}
```

Now the patterns `ngerman-x-20080601` are be used.

Or if you want to compare hyphenations:

```
\documentclass{article}
\usepackage{hyphsubst}
% save original patterns for ngerman in ngerman-saved
\HyphSubstLet{ngerman-saved}{ngerman}
\usepackage[ngerman]{babel}
\begin{document}
  We start with the original patterns for ngerman.
  \HyphSubstLet{ngerman}{ngerman-x-latest}%
  Now we are using ngerman-x-latest.
  \HyphSubstLet{ngerman}{ngerman-saved}%
  Again we are using the original patterns.
\end{document}
```

`\HyphSubstIfExists {<name>} {<then>} {<else>}`

Tests if patterns with name `<name>` exist and execute `<then>` in case of success and `<else>` otherwise.

## 1.3 L<sup>A</sup>T<sub>E</sub>X

The package can also be loaded before `\documentclass`:

```

\RequirePackage[ngerman=ngerman-x-20080601]{hyphsubst}
\documentclass{article}
...

```

This allows to put the package in a format file.

Package options are interpreted as ‘let’ assignments and passed to macro `\HyphSubstLet`:

```
\usepackage[ngerman=ngerman-x-20080601]{hyphsubst}
```

The part before the equal sign is the first argument for `\HyphSubstLet` and the part after the equal sign forms the second argument:

```
\HyphSubstLet{ngerman}{ngerman-x-20080601}
```

Note, this only works for direct package options. Global options are ignored.

## 1.4 plain-TeX

The package can be loaded and used with plain-TeX, e.g.:

```

\input hyphsubst.sty
\HyphSubstLet{ngerman}{ngerman-x-latest}

```

## 2 Implementation

```
1 <(*package>
```

### 2.1 Reload check and package identification

Reload check, especially if the package is not used with L<sup>A</sup>T<sub>E</sub>X.

```

2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \expandafter\let\expandafter\x\csname ver@hyphsubst.sty\endcsname
9 \ifcase 0%
10 \ifx\x\relax % plain
11 \else
12 \ifx\x\empty % LaTeX
13 \else
14 1%
15 \fi
16 \fi
17 \else
18 \catcode35 6 % #
19 \catcode123 1 % {
20 \catcode125 2 % }
21 \expandafter\ifx\csname PackageInfo\endcsname\relax
22 \def\x#1#2{%
23 \immediate\write-1{Package #1 Info: #2.}%
24 }%
25 \else
26 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27 \fi
28 \x{hyphsubst}{The package is already loaded}%
29 \endgroup
30 \expandafter\endinput
31 \fi
32 \endgroup

```

Package identification:

```

33 \begingroup
34   \catcode35 6 % #
35   \catcode40 12 % (
36   \catcode41 12 % )
37   \catcode44 12 % ,
38   \catcode45 12 % -
39   \catcode46 12 % .
40   \catcode47 12 % /
41   \catcode58 12 % :
42   \catcode64 11 % @
43   \catcode123 1 % {
44   \catcode125 2 % }
45   \expandafter\ifx\csname ProvidesPackage\endcsname\relax
46     \def\x#1#2#3[#4]{\endgroup
47       \immediate\write-1{Package: #3 #4}%
48       \xdef#1{#4}%
49     }%
50   \else
51     \def\x#1#2[#3]{\endgroup
52       #2[{#3}]%
53       \ifx#1\relax
54         \xdef#1{#3}%
55       \fi
56     }%
57   \fi
58   \expandafter\x\csname ver@hyphsubst.sty\endcsname
59   \ProvidesPackage{hyphsubst}%
60   [2008/06/09 v0.2 Substitute hyphenation patterns (HO)]
61 \begingroup
62   \catcode123 1 % {
63   \catcode125 2 % }
64   \def\x{\endgroup
65     \expandafter\edef\csname HyphSubst@AtEnd\endcsname{%
66       \catcode35 \the\catcode35\relax
67       \catcode64 \the\catcode64\relax
68       \catcode123 \the\catcode123\relax
69       \catcode125 \the\catcode125\relax
70     }%
71   }%
72 \x
73 \catcode35 6 % #
74 \catcode64 11 % @
75 \catcode123 1 % {
76 \catcode125 2 % }
77 \def\TMP@EnsureCode#1#2{%
78   \edef\HyphSubst@AtEnd{%
79     \HyphSubst@AtEnd
80     \catcode#1 \the\catcode#1\relax
81   }%
82   \catcode#1 #2\relax
83 }
84 \TMP@EnsureCode{39}{12}% '
85 \TMP@EnsureCode{46}{12}% .
86 \TMP@EnsureCode{47}{12}% /
87 \TMP@EnsureCode{58}{12}% :
88 \TMP@EnsureCode{61}{12}% =
89 \TMP@EnsureCode{96}{12}% `

```

## 2.2 Package

```

90 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

91 \expandafter\ifx\csname RequirePackage\endcsname\relax
92 \input infwarerr.sty\relax
93 \else
94 \RequirePackage{infwarerr}[2007/09/09]%
95 \fi

\HyphSubst@l
96 \begingroup\expandafter\expandafter\expandafter\endgroup
97 \expandafter\ifx\csname et@xlang\endcsname\relax
98 \def\HyphSubst@l{10}%
99 \else
100 \def\HyphSubst@l{lang@}%
101 \fi

\HyphSubstLet
102 \def\HyphSubstLet#1#2{%
103 \begingroup
104 \def\x{%
105 \expandafter\ifx\csname\HyphSubst@l#2\endcsname\relax
106 \@PackageError{hyphsubst}{Unknown pattern ‘#2’}\@ehc
107 \else
108 \def\lmsg{%
109 \expandafter\ifx\csname\HyphSubst@l#1\endcsname\relax
110 \edef\msg{%
111 New: \expandafter\string\csname\HyphSubst@l#1\endcsname
112 \noexpand\MessageBreak
113 }%
114 \else
115 \edef\msg{%
116 Redefined: \expandafter\string\csname\HyphSubst@l#1\endcsname
117 \noexpand\MessageBreak
118 old value: \number\csname\HyphSubst@l#1\endcsname
119 \noexpand\MessageBreak
120 }%
121 \ifnum\csname\HyphSubst@l#1\endcsname=\language
122 \edef\x{%
123 \noexpand\language=%
124 \number\csname\HyphSubst@l#2\endcsname\relax
125 }%
126 \edef\lmsg{%
127 \noexpand\MessageBreak
128 \string\language\noexpand\space updated%
129 }%
130 \fi
131 \fi
132 \expandafter\global\expandafter\let
133 \csname\HyphSubst@l#1\expandafter\endcsname
134 \csname\HyphSubst@l#2\endcsname
135 \@PackageInfo{hyphsubst}{%
136 \msg
137 new value: \number\csname\HyphSubst@l#1\endcsname
138 \lmsg
139 }%
140 \fi
141 \expandafter\endgroup\x
142 }

\HyphSubstIfExists
143 \def\HyphSubstIfExists#1{%
144 \begingroup\expandafter\expandafter\expandafter\endgroup
145 \expandafter\ifx\csname\HyphSubst@l#1\endcsname\relax
146 \expandafter\@secondoftwo

```

```

147 \else
148 \expandafter\@firstoftwo
149 \fi
150 }

\@firstoftwo

151 \expandafter\ifx\csname @firstoftwo\endcsname\relax
152 \long\def\@firstoftwo#1#2{#1}%
153 \fi

\@secondoftwo

154 \expandafter\ifx\csname @secondoftwo\endcsname\relax
155 \long\def\@secondoftwo#1#2{#2}%
156 \fi

157 \begingroup\expandafter\expandafter\expandafter\endgroup
158 \expandafter\ifx\csname documentclass\endcsname\relax
159 \HyphSubst@AtEnd
160 \expandafter\endinput
161 \fi

162 \DeclareOption*{%
163 \expandafter\HyphSubst@Option\CurrentOption==\relax
164 }
165 \def\HyphSubst@Option#1=#2=#3\relax{%
166 \HyphSubstLet{#1}{#2}%
167 }
168 \ProcessOptions*\relax

169 \HyphSubst@AtEnd
170 \end{package}

```

## 3 Test

### 3.1 Catcode checks for loading

```

171 \test1\
172 \catcode'\{=1 %
173 \catcode'\}=2 %
174 \catcode'\#=6 %
175 \catcode'\@=11 %
176 \expandafter\ifx\csname count@\endcsname\relax
177 \countdef\count@=255 %
178 \fi
179 \expandafter\ifx\csname @gobble\endcsname\relax
180 \long\def\@gobble#1{}%
181 \fi
182 \expandafter\ifx\csname @firstofone\endcsname\relax
183 \long\def\@firstofone#1{#1}%
184 \fi
185 \expandafter\ifx\csname loop\endcsname\relax
186 \expandafter\@firstofone
187 \else
188 \expandafter\@gobble
189 \fi
190 {%
191 \def\loop#1\repeat{%
192 \def\body{#1}%
193 \iterate
194 }%
195 \def\iterate{%
196 \body

```

```

197     \let\next\iterate
198   \else
199     \let\next\relax
200   \fi
201   \next
202 }%
203 \let\repeat=\fi
204 }%
205 \def\RestoreCatcodes{}
206 \count@=0 %
207 \loop
208   \edef\RestoreCatcodes{%
209     \RestoreCatcodes
210     \catcode\the\count@=\the\catcode\count@\relax
211   }%
212 \ifnum\count@<255 %
213   \advance\count@ 1 %
214 \repeat
215
216 \def\RangeCatcodeInvalid#1#2{%
217   \count@=#1\relax
218   \loop
219     \catcode\count@=15 %
220   \ifnum\count@<#2\relax
221     \advance\count@ 1 %
222   \repeat
223 }
224 \expandafter\ifx\csname LoadCommand\endcsname\relax
225   \def\LoadCommand{\input hyphsubst.sty\relax}%
226 \fi
227 \def\Test{%
228   \RangeCatcodeInvalid{0}{47}%
229   \RangeCatcodeInvalid{58}{64}%
230   \RangeCatcodeInvalid{91}{96}%
231   \RangeCatcodeInvalid{123}{255}%
232   \catcode'\@=12 %
233   \catcode'\=0 %
234   \catcode'\{=1 %
235   \catcode'\}=2 %
236   \catcode'\#=6 %
237   \catcode'\[=12 %
238   \catcode'\]=12 %
239   \catcode'\%=14 %
240   \catcode'\ =10 %
241   \catcode13=5 %
242   \LoadCommand
243   \RestoreCatcodes
244 }
245 \Test
246 \csname @@end\endcsname
247 \end
248 </test1>

```

## 3.2 Main tests

```

249 <*test2>
250 \input hyphsubst.sty\relax
251
252 \catcode'\@=11\relax
253 \ifx\et@xlang\@undefined
254   \def\l#1{\csname l@#1\endcsname}%
255 \else
256   \def\l#1{\csname lang@#1\endcsname}%

```

```

257 \fi
258 \def\Check#1#2{%
259   \ifnum#1=#2\relax
260   \else
261     \@PackageError{test}{Wrong number: #1 <> #2}\@ehc
262   \fi
263 }
264
265 \language=0\relax
266 \HyphSubstLet{ZeroSaved}{ngerman}
267 \Check{\l{USenglish}}{0}%
268 \HyphSubstLet{USenglish}{ngerman}
269 \Check{\l{USenglish}}{\l{ngerman}}
270 \ifnum\l{USenglish}>0 %
271 \else
272   \@PackageError{test}{\string\language\space is not updated}\@ehc
273 \fi
274 \HyphSubstLet{german}{ngerman}
275 \Check{\l{german}}{\l{ngerman}}
276 \Check{\l{USenglish}}{\l{ngerman}}
277 \csname @@end\endcsname\end
278 </test2>

```

## 4 Installation

### 4.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/hyphsubst.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/hyphsubst.pdf](#) Documentation.

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

*TDS* refers to the standard “A Directory Structure for T<sub>E</sub>X Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

### 4.2 Bundle installation

**Unpacking.** Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

### 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain-T<sub>E</sub>X:

```
tex hyphsubst.dtx
```

---

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)



**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
hyphsubst.sty      → tex/generic/oberdiek/hyphsubst.sty
hyphsubst.pdf      → doc/latex/oberdiek/hyphsubst.pdf
test/hyphsubst-test1.tex → doc/latex/oberdiek/test/hyphsubst-test1.tex
test/hyphsubst-test2.tex → doc/latex/oberdiek/test/hyphsubst-test2.tex
hyphsubst.dtx      → source/latex/oberdiek/hyphsubst.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

## 4.4 Refresh file name databases

If your  $\text{\TeX}$  distribution (`te $\text{\TeX}$` , `mik $\text{\TeX}$` , ...) relies on file name databases, you must refresh these. For example, `te $\text{\TeX}$`  users run `texhash` or `mktextlsr`.

## 4.5 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk hyphsubst.pdf unpack_files output .
```

**Unpacking with  $\text{\LaTeX}$ .** The `.dtx` chooses its action depending on the format:  
**plain- $\text{\TeX}$ :** Run `docstrip` and extract the files.

**$\text{\LaTeX}$ :** Generate the documentation.

If you insist on using  $\text{\LaTeX}$  for `docstrip` (really, `docstrip` does not need  $\text{\LaTeX}$ ), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{hyphsubst.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with `pdf $\text{\LaTeX}$` :

```
pdflatex hyphsubst.dtx
makeindex -s gind.ist hyphsubst.idx
pdflatex hyphsubst.dtx
makeindex -s gind.ist hyphsubst.idx
pdflatex hyphsubst.dtx
```

# 5 History

[2008/06/07 v0.1]

- First public version.

[2008/06/09 v0.2]

- Support for  $\varepsilon$ - $\text{\TeX}$ 's `language.def` added.
- Fix for undefined `\lmsg`.

## 6 Index

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